

Memorandum**PROJECT: North Santa Monica Boulevard (NSMB) Reconstruction****PSOMAS Project No. 1BEV041000**

To: Dr. Barry Pressman, Chair
North Santa Monica Boulevard Blue Ribbon Committee (BRC)

From: Psomas

Subject: North Santa Monica Boulevard (NSMB) Reconstruction Project Blue Ribbon Committee Meeting Number 3 – Information Packet

Date: January 2, 2014

This memorandum and attached Information Packet is provided to the BRC after BRC Meeting # 2 and in preparation for the third BRC meeting scheduled for January 8, 2014.

In BRC Meeting #2 questions were raised by Committee members regarding existing conditions of North Santa Monica Boulevard (NSMB), safety concerns of introducing various project elements such as medians, and specific design challenges such as working with the existing roadway geometry. Since meeting #2 the Psomas team has gathered the data requested by the BRC Members and met with representatives of the Beverly Hills Fire Department and Beverly Hills Police Department to discuss public safety considerations. We also met with the Beverly Gardens Park architectural consultant to discuss the interface between the two projects. The information provided herewith is constitutes our response to the questions raised by the Committee members at BRC meeting #2 and summarizes our subsequent meetings, discussions, and research.

Finally, Concept Alternatives are presented for discussion along with our Recommended Alternative for BRC consideration.

The consultant team's recommended alternative includes between a 3' and 6' widening along the north side of NSMB, construction of curbed, planted median islands where appropriate, and installation of street trees along the north edge of NSMB.

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1. Requested Information

a. Existing Conditions

Roadway pavement and drainage infrastructure

The Committee has requested a clarification regarding the existing condition of NSMB and the need for reconstruction. The existing asphalt pavement has failed. The pavement is cracked and deteriorated throughout NSMB. The road base and subgrade is exposed to infiltration of water leading further deterioration. The geotechnical and pavement investigation performed as a part of this study indicates high moisture content in the road base material and a failed base condition.

The existing pavement has been continually overlaid, over the years, with new asphalt surfacing as a maintenance measure, a common practice, to provide a new smooth wearing surface. Resurfacing has not and does not correct failure of the base or subgrade. The original surface grade elevations of the roadway have been altered significantly resulting in localized drainage failures which have exacerbated the pavement system's deterioration. The concrete gutters have been also paved over, compromising the ability of the surface to drain positively. The resulting asphalt gutters cannot effectively convey water to the drain inlets, leading to slow drainage and standing water. The drain inlet openings are diminished by the built up asphalt reducing their capacity. The built up asphalt has also diminished the height of the curbs on NSMB reducing the capacity of the street to channel storm water in large events. The shorter curbs provide less protection from vehicles jumping the curb. There are many locations where the curbs are deteriorated or completely missing.

Several sections of storm drain mainlines in NSMB must be replaced due to inadequate capacity and/or condition. Replacing underground utilities requires removal and replacement of the pavement in the location of the construction. Further, the construction requires heavy equipment which is destructive to the pavement surrounding the work area, especially where it is already in poor condition.

b. Bicycle Connectivity

Traffic Flow

Do bike lanes improve or impede vehicular traffic flow? Bicyclists are legally entitled to use the outside travel lane on roadways other than freeways. On an urban arterial with a standard 12-foot outside travel lane, bicyclists typically travel in the middle or toward the outer edge of the lane, generally slowing vehicular traffic as there is not sufficient width to safely pass a bicyclist without maneuvering into the adjacent lane. The amount of vehicular delay depends upon the number of bicyclists on the particular roadway. Given regional and state policy initiatives, it can be expected that the number of bicyclists will grow over time. In order to make roadways safer for bicyclists, transportation engineers typically consider providing wider curb lanes or striped bicycle lanes.

Accidents

Do bike lanes reduce accidents? The number of reported bicycle accidents on North Santa Monica Boulevard in the City of Beverly Hills in the three years between May 2010 and May 2013 was 13. (Source: California Statewide Integrated Traffic Reporting System). During that same time period, there were 10 bicycle accidents on the portion of Santa Monica Boulevard in West Hollywood where there are bike lanes compared to 30 bicycle accidents on the portion east of Sweetzer, where there are no bike lanes. It should be noted that on street parking is permitted on Santa Monica Blvd. in West Hollywood. The number of bicycle accidents is relatively small, so there is limited data available on bicycle accident rates, nor many before and after studies. It should be noted that many bicycle accidents are also not reported.

One study indicated that the addition of bicycle lanes on arterial streets is shown to reduce the risk of serious injuries by 30 percent. (Kay Teschke et al. 2012. Route Infrastructure and the Risk of Injuries

to Bicyclists: A Case-Crossover Study. American Journal of Public Health) Injury risks to bicyclists in New York City dropped by 72 percent between 2000 and 2010 and declined by nearly 30 percent two consecutive years in a row (2008 and 2009) when the City was the most active in building bicycle lanes.

A 2000 safety study of 682 bicycle-motor vehicle accidents in Phoenix found that 95% of crashes occurred on streets with no bicycle facilities and only two percent occurred in bicycle lanes. (Adam Arvidson, 2012. Power to the Peddlers. Planning May/June 2012, pp. 12-17.)

The underlying reason of this pattern is that motorists drive slower when bicyclists and pedestrians are visible either in number or frequency, and drive faster when fewer pedestrian and bicyclists are present resulting in higher overall travel speeds. This effect of modified driving behavior is consistent with other research focused on 24 California cities that shows that higher bicycling rates among the population generally shows a much lower risk of fatal crashes for all road users. Comparing these low versus high bicycling communities, there was a ten-fold reduction in fatality rate for motorists, and eleven-fold reduction in fatality rate for pedestrians, and an almost fifty-fold reduction in fatality rate for bicyclists. (Marshall, Wesley E., N. W. Garrick. 2011. Evidence on Why Bike-Friendly Cities Are Safer For All Road Users. Environmental Practice 13 (1) March 2011.)

c. Meeting with City of Beverly Hills Public Safety Representatives

Raised vegetated medians, if implemented, would provide a positive change to the corridor including the addition of urban greening with the opportunity to create a distinct identity for NSMB. The AASHTO Green Book states that medians are a desirable feature of arterial streets and should be provided where space permits. It notes that even a median of only 4 feet wide is better than none; however each additional foot provides an additional increment of safety and improved operation. The Committee is in favor of considering the addition of raised medians on NSMB, but expressed concerns regarding access for emergency vehicles, which currently have the flexibility of using the center lane.

The consultant team met with Chris Heyer, Deputy Fire Marshal, and Joe Matsch, Fire Captain of the Beverly Hills Fire Department, and Gregg Mader, Sergeant of the Beverly Hills Police Department on December 20, 2013 to discuss the project including the impact of introducing medians on NSMB. The following items were discussed:

- In considering emergency vehicle access, adding medians is feasible. Standard operating procedure is to drive down the painted center lane where there are no raised median islands, but FD/PD can also respond along roadways with medians, sometimes by running on the opposite side of the median if necessary.
- The design may consider maximizing the area/number of medians in appropriate locations within reason. That is, the design should consider some shorter medians, medians that are narrower than the center lane, and omitting medians in some sections to allow greater flexibility for emergency access. The Fire Department requires 10' clearance to pass by stopped traffic.
- Widening the roadway would enhance emergency vehicle access as drivers would have more room to pull over to the curb. This would also improve feasibility for adding raised medians. Sergeant Mader suggested not striping bike lanes.
- Eucalyptus trees on the south side of NSMB in the undeveloped area (between Alpine Drive and Sierra Drive) impede emergency vehicle access. FD desires the trees to be removed, however they are on private property, so Code Enforcement can work with the owner to have them trimmed. The design of the roadway should consider providing more lateral clearance from the trees if possible.

d. Specific Design Considerations

NSMB/Beverly Blvd Intersection

Concerns have been expressed regarding safety of the subject intersection due to its complex geometry and substandard pedestrian access issues. The proposed design of NSMB shall consider up to date design standards and feasible improvements within the right-of way to enhance safety and access, and simplify movements through the intersection. Proposed changes to the intersection will be addressed in the detailed design. Project elements, if elected, such as widening and medians will directly affect the final design of the intersection.

Curb Radii

Some committee members expressed concern regarding tight curb radii where NSMB intersects the cross streets (especially the residential streets on the north side.) Appropriate curb radii is generally selected by jurisdictional standard design based on the types of intersecting streets and consideration other site specific circumstances, including curb ramp/landing area needs, signal equipment location, visibility, and available right-of-way.

Study the project in sections

The consultant team started review of the project, and continues to do so, in four distinct identified segments based on roadway geometry and uses of the adjacent parcels. These sections are identified in the table below:

Segment	North side	South side
Western Segment (Moreno to Wilshire)	Hospitality	Commercial
Churches and Parking Structures (Wilshire to Rodeo)	Churches/Beverly Gardens Park	Parking Structures
Beverly Gardens Park/Civic Center (Rodeo to Civic Center Drive)	Beverly Gardens Park	Civic Center
Eastern Segment (Civic Center Drive to Doheny)	Beverly Gardens Park	Vacant (former RR) land

Bus stops

Metro Bus Operation, Scott Page, Manager of Service Planning, confirmed that bus turnouts adversely impact bus operations and that Metro generally will not use them. Further, the City cannot force them to use them. If they are provided, the bus drivers will either stop beyond the turnout, as the Metro Rapid Bus does at the turnout between Crescent and Canon, or they will stop in the travel lane and make passengers walk out to the bus. It was also noted that bus turnouts increase accidents as buses try to re-enter traffic.

There is insufficient right of way on the south side of Santa Monica Boulevard to provide turnouts, other than in front of City Hall or the Annenberg Center for the Performing Arts, where the bus turnout was recently removed. In order to provide turnouts on the north side of the street, an area of 2,400 square feet would be required at each location. The turnouts are 12 feet wide and 140 feet long (60 feet for one bus and 80 feet for a second bus, in case of a break down or multiple buses arriving at the same time) and 60 foot transitions at either end of the turnout.

The table below illustrates the transit lines that travel on North Santa Monica Boulevard.

Line	Route Name	Service Area	Approx. Weekday Hrs of Operation in the Beverly Hills Area		Days of Operation	
			NB/EB	SB/WB	M-F	Sat/Sun Holiday
004	Metro Local - Downtown Los Angeles - West Los Angeles - Santa Monica via Santa Monica Bl	Los Angeles, Echo Park, West Hollywood, Beverly Hills, Century City, Santa Monica	5:09 AM – 4:49 AM 10 minute peak headway	4:53 AM – 4:25 AM 10 minute peak headway	X	X
016, 316	Metro Local and Limited -- Downtown Los Angeles - Century City via 3rd St	Los Angeles, Koreatown, Hancock Park, Park La Brea, Beverly Hills, Century City	4:08 AM - 12:43 AM 10 minute peak headway	5:00 AM - 12:29 AM 20 minute peak headway	X	X
704	Metro Rapid - Downtown Los Angeles - Santa Monica via Santa Monica Bl	Los Angeles, Echo Park, West Hollywood, West Los Angeles, Santa Monica	6:30 AM – 8:14 PM 10 minute peak headway	6:09 AM – 8:41 PM 10 minute peak headway	X	X

Widening the South Side of NSMB

The private undeveloped (former railroad, Alpine to Sierra) property currently has a chain link fence on the property line which is 2' behind the existing curb, eucalyptus trees along the street, some overgrown and encroaching onto the right-of-way.

Widening within existing right-of-way would yield an additional 12" to 18" at best and would worsen an existing substandard condition (i.e. no sidewalk, parkway, street lights) and is not recommended. Additional trees would have to be removed on private property. The Fire Department has indicated that the trees currently interfere with emergency access and require trimming or removal.

Consideration of widening in this area would require a private property dedication to allow ample room to allow for parkway and sidewalk. It should be noted that the existing property is 60' deep, so a dedication may create a hardship for the potential development of the property. Widening to the south also presents engineering challenges including regrading to join the elevations and design of

longitudinal transitions in the roadway geometry. Further, all existing surface infrastructure including storm drain inlets, fire hydrants, signal equipment, etc. would require relocation.

The disposition of the commercially developed property between Linden and Wilshire is similar with regard to the interface with NSMB, and the same considerations noted above should be considered.

2. Requested – Alternatives Discussion

a. Alternative 1A - Maintain Existing Curb to Curb Widths – No Median

Alternative 1A is the “Base Project” alternative. Basic features include:

- Maintain existing curb to curb width of roadway.
- Repair/Replace subsurface infrastructure.
- Replace deteriorated roadway pavement, curb and gutter.
- Address substandard conditions and apply up to date design standards.
- Address Specific design consideration cited above.

The concept for Alternative 1A is illustrated in Exhibits 1, 1A-1, 1A-2, 1A-3, 1A-4 attached herewith.

b. Alternative 1B - Maintain Existing Curb to Curb Widths - Vegetated Median

Alternative 1B is identical to the Base Project Alternative 1A above, with the addition of vegetated medians.

The concept for Alternative 1B is illustrated in Exhibits 1B-1, 1B-2, 1B-3, 1B-4 attached herewith.

3. Recommended Alternative for BRC Consideration

a. Alternative 2 – Increase Curb to Curb Width – Vegetated Median

Alternative 2 includes all project upgrades provided in Alternative 1B, and considers widening the roadway to provide a 66’ curb to curb as follows:

- Widen existing 63’ roadway sections by 3’ by relocating the north curb.
- Widen existing 60’ roadway sections by 6’ by relocating the north curb.
- Establish a Shared Roadway (No bikeway Designation) with an outside lane of 16’ (to curb face)

Per the California Streets and Highways Code Section 891 - All city, county, regional, and other local agencies responsible for the development or operation of bikeways or roadways where bicycle travel is permitted shall utilize all minimum safety design criteria

Per the Caltrans Highway Design Manual, Chapter 1000 Bicycle Transportation Design, Section 1002.1 Selection of the Type of Facility – (1) Shared Roadway (No Bikeway Designation). Most bicycle travel in the State now occurs on streets and highways without bikeway designations and this may continue to be true in the future as well. In some instances, entire street systems may be fully adequate for safe and efficient bicycle travel, where signing and pavement marking for bicycle use may be unnecessary.

The American Association of State Highway and Transportation Officials (AASHTO) publication "Geometric Design of Highways and Streets" (the Green Book), in the chapter devoted to Design Guidelines for Bicycle Facilities it states that lane width of 15 feet or less (to face of curb with a 2' gutter) require most vehicles to be driven at least part way into the next lane to pass a bicyclist

The concept for Alternative 2 is illustrated in Exhibits 2-1, 2-2, 2-3, 2-4 attached herewith.